

*Rachel Lawton*

~~CASPER~~ NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT

Jan. - Dec. 1970

CO  
2/22

United States Department of the Interior  
Bureau of Sport Fisheries and Wildlife

RACHEL CARSON NATIONAL WILDLIFE REFUGE, *Maine*

Under the supervision of

PARKER RIVER NATIONAL WILDLIFE REFUGE

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# NARRATIVE REPORT

## RACHEL CARSON NATIONAL WILDLIFE REFUGE

Jan. - Dec. 1970

### I. General

#### A. Weather Conditions.

The following information on weather was obtained from the U. S. Weather Bureau Office in Portland, Maine located nearby to the planned northernmost unit of the Rachel Carson National Wildlife Refuge, the Spurwink area. Overall weather conditions roughly paralleled those of Parker River except for greater severity in extreme periods.

#### Precipitation

	<u>Snowfall</u>	<u>This Month</u>	<u>Average</u>	<u>Maximum</u>	<u>Minimum</u>
				<u>Temperature</u>	
Jan.	6.2	.76	4.37	43	-8
Feb.	9.8	4.31	3.80	49	3
Mar.	20.7	4.22	4.34	49	12
Apr.	3	4.15	3.73	80	23
May	-	3.15	3.41	85	39
June	-	2.91	3.18	90	43
July	-	.95	2.86	93	50
Aug.	-	5.12	2.42	89	49
Sept.	-	4.49	3.52	88	44
Oct.	T	3.87	3.20	74	28
Nov.	-	2.38	4.17	60	28
Dec.	<u>54.8</u>	<u>5.14</u>	<u>3.85</u>	<u>59</u>	<u>-14</u>
Totals	94.5	41.45	42.85		
Extremes				93	-14

#### B. Habitat Conditions.

1. Water: The water in all units of the refuge acquired and optioned to date is tidal. The mean tidal range of the lower units is 8.7 feet and the spring range is 9.9 feet. The highest tide is estimated as 13.5 feet above, and the lowest tide 3.5 feet below mean low water. All nine units are elevated above the level of the tidal streams which have cut rather deep channels through them.

2. Food and Cover: Vegetation is a combination of salt meadow cordgrass (Spartina patens), short salt marsh cordgrasses (Spartina alterniflora) and salt grass (Distichlis spicata). In the highest marshes, salt marsh golden rod (Solidago sempervirens), orache (Atriplex hastata), plantain (Plantago maritime), sea lavender (Limonium nashii), and black grass (Juncus gerardi), are abundant. In a number of spots, three square (Scirpus robustus) is common.

Food and cover were assumed to be adequate in all units.

## II. Wildlife

### A. Migratory Birds.

#### 1. Waterfowl.

Canada geese, black ducks, green-winged teal and scattered other species utilized the marsh units in varying numbers as season dictated.

As in recent N.R.'s, State of Maine winter waterfowl inventory figures covering 1966-1970 are given below for reference and comparative purposes. This information was obtained from State Biologists who regularly each January have flown the forty-five mile stretch of coastline in which the nine Rachel Carson units are located (their census unit 8). It is probable that the majority of these birds were observed off shore or in rivers rather than on coastal marsh land units of the refuge.

#### WINTER INVENTORY DATA RACHEL CARSON AREA

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Canada Geese				290	285
Black Duck	1530	1207	700	1180	2805
Goldeneye	1539	483	400	210	355
Bufflehead	164	45	250	90	60
Scoter	140	304	200	520	90
Eider	5934	721	3500	1290	1915
Old Squaw	138	45	200	80	-
Miscel.	<u>259</u>	<u>229</u>	<u>100</u>	<u>60</u>	<u>-</u>
	9704	3034	5350	3430	5225

#### Remarks:

1. Winter inventory count concentrates mainly on black ducks as the target species.



2. Data provided by J. William Peppard, Waterfowl Research Leader, Maine Dept. of Inland Fisheries and Game.

### III. Refuge Development and Maintenance

#### A. Physical Development.

##### 1. Marsh and Water.

Nothing to report.

##### 2. Roads and Trails.

a. Constructed 1/4 mile access road to dedication site.

b. Brushed out 1/2 mile nature trail.

##### 3. Fencing and Posting.

a. Reconstructed 300' of exterior fence removed from view for the dedication ceremonies.

4. Land Acquisition. Records as of Dec. 31, 1970 indicated that 1,363.99 acres had been deeded to the Bureau. 13.25 acres were optioned in 1970. The sum of deeded plus optioned land represents approximately 34% of the total approved acquisition.

### IV. Resource Management

Not applicable.

### V. Field Investigations or Applied Research

Not applicable.

### VI. Public Relations

#### A. Recreational Use.

As a result of the publicity surrounding the dedication ceremonies and the erection of a redwood routed recognition sign at the entrance road to the dedication site, this area received increased public use during the summer and fall period. The dedication site is the only portion of upland within the total acquisition program that lends itself to any degree of public use. Most visitors came to hike the 3/4 mile nature trail.

B. Refuge Visitors.

Walter J. Hickel	Secretary of Interior	Dedication	6/27
Leslie Glasgow	Asst. Secretary for Parks & Wildlife	"	6/27
John Gottschalk	Director of Bureau	"	6/27
Richard E. Griffith	Regional Director	"	6/27
George Bucknam	Commissioner of Maine Dept. of Inland Fisheries & Game	"	6/27
Mr. Kyros	Congressman, State of Maine	"	6/27
Ronald T. Speers,	former Commissioner of Maine Dept. of Sea & Shore Fisheries	"	6/27
James Shepard,	Director, Mass. Fish & Game, Boston, Mass.	"	6/27

A number of other prominent representatives of public and private conservation organizations attended the dedication ceremonies.

C. Refuge Participation.

Not applicable.

D. Hunting.

As a result of an incomplete, piecemeal ownership pattern, no areas of the refuge were posted and closed to hunting. Several waterfowl blinds are still being maintained on the marshes by private individuals.

E. Violations.

Not applicable.

F. Safety.

Not applicable.

## VII. Other Items

On June 27 the Rachel Carson Refuge was formally dedicated at a ceremony held at the Upper Wells Unit. This was the culmination of one hectic month of preparations for the event.

An estimated 300 people attended and witnessed the placing of a bronze plaque by Secretary of the Interior Walter Hickel after his

excellent tribute to Miss Carson. Many dignitaries attended the ceremony including Assistant Secretary Glasgow and his wife, Bureau Director John Gottschalk, Regional Director Griffith and his wife, George Bucknam, Commissioner of Maine Department of Inland Fisheries and Game, James Sheppard, Director Massachusetts Division of Fisheries and Game, Maine Congressman Kyros, Congressional candidate Ronald Speers and many other invited guests.

Credits:

Sections III, IV, V, VI, VII and photos - E. S. Moses  
Sections I, II, and NR forms - W. R. Forward  
Typing - C. Welch

Photographs

Appended.

N.R. Forms

1C, 1D, 5, 7, 8 and 11 have been omitted since they are not applicable.

Reviewed by:

Submitted by:

Thomas Carson 2/26/71  
Signature Date

Edward S. Moses 2-12-71  
Signature Date

NR's Checked in R. O. by W. R. Forward



3-1750a  
Cont. NR-1  
(Rev. March 1953)  
5RF - 4/68

WATERFOWL  
(Continuation Sheet)

REFUGEE Rachel Carson W. W.

MONTHS OF Jan. TO April, 1970

(1) Species	(2) Weeks of reporting period								(3)	(4)
	Estimated : Production								waterfowl : Broods : Estimated	days use : seen : Total
	3/12 - 18 11	19 - 25 12	26 - 4/1 13	5 - 8 14	9 - 15 15	16 - 22 16	23 - 29 17	30 18		
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada	50	75	300	250	100	100	50	50	6,525	
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	25	50	50	20	20	10	10	10	2,425	
Black	500	1,000	500	150	150	100	100	100	30,200	
Gadwall										
Baldpate										
Pintail	25	50	50						875	
GW teal		300	500	250	50	50	10	10	8,130	
BW teal		10	100	150	200	100	50	30	4,300	
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye	50	100	100	50	30	20	20	10	4,420	
Bufflehead	100	100	150	50	50	50	50	50	5,230	
Ruddy										
Other										
DATA FURNISHED ARE ESTIMATED.										
Coot:										
<div style="display: flex; justify-content: space-between;"> <span>(over)</span> <span>NR-1 Cont. From January to April 1970</span> </div>										



	(5)	:	(6)	:	(7)
	Total Days Use	:	Peak Number	:	Total Production
Swans	-	:	-	:	-
Geese	6,525	:	300	:	-
Ducks	55,580	:	1,610	:	-
Coots	-	:	-	:	-

SUMMARY

Principal feeding areas Tidal creeks and mud flats.

Principal nesting areas margin of units.

Reported by William E. Forward

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

- (1) Species: In addition to the birds listed on form, other species occurring on the refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

3-1750

Form NR-1

(Rev. March 1953)

**DAVID C. COLE**

REFUGE Rachel Carson N. W.

MONTHS OF May TO August, 19 70

(1) Species	(2) Weeks of reporting period									
	5/1 - 7 1	8 - 14 2	15 - 21 3	22 - 28 4	29 - 6/4 5	5 - 11 6	12 - 18 7	19 - 25 8	26 - 7/2 9	3 - 9 10
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada	50	20								
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard	10	10	10	10	10	10	10	10	10	10
Black	100	100	75	50	50	40	40	40	40	40
Gadwall										
Baldpate										
Pintail										
Green-winged teal	10	10	10							
Blue-winged teal	30	20	20	10	10	10	10	10	10	10
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye	10	10	5							
Bufflehead	40	30	30	10						
Ruddy										
Other										
			DATA FURNISHED ARE ESTIMATES							
<u>Coot:</u>										
					NR-1 From	May		to August		1970



3-1750a  
Cont. NR-1  
(Rev. March 1953)  
5RF - 4/68

WATERFOWL  
(Continuation Sheet)

REFUGEE Rachel Carson

MONTHS OF May TO August, 19 70

[illegible]

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	490	50	
Ducks	15,050	280	
Coots			

SUMMARY	
Principal feeding areas	Salt marsh creeks and mud flats.
Principal nesting areas	Margins of marsh units.

Reported by William R. Forward

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

- (1) Species: In addition to the birds listed on form, other species occurring on the refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

WATERFOWL

REFUGE Rachel Carson N. W.

MONTHS OF Sept. TO Dec., 1970

(1) Species	(2) Weeks of reporting period									
	9/1 - 7	8 - 14	15 - 21	22 - 28	29-10/5	6 - 12	13 - 19	20 - 26	27-11/2	3 - 9
	1	2	3	4	5	6	7	8	9	10
<u>Swans:</u>										
Whistling										
Trumpeter										
<u>Geese:</u>										
Canada					20	50	50	30	10	10
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
<u>Ducks:</u>										
Mallard	60	60	50	50	20	20	20	20	10	10
Black	150	150	200	350	500	500	150	200	100	100
Gadwall										
Baldpate										
Pintail	10	20	20	50	20	10	10			
Green-winged teal	30	30	50	50	100	100	50	50	50	50
Blue-winged teal	50	100	150	50	30	10	10			
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye							10	30	50	60
Bufflehead				10	20	30	50	50	50	60
Ruddy										
Other										
	Data furnished are estimates.									
<u>Coot:</u>										

NR-1 From Sept to Dec 1970

3-1750a  
 Cont. NR-1  
 (Rev. March 1953)  
 5RF - 4/68

WATERFOWL  
 (Continuation Sheet)

REFUGE Rachel Carson N. W.

MONTHS OF Sept. TO Dec., 1970

(1) Species	(2) Weeks of reporting period								(3) Estimated waterfowl days use	(4) Production Broods Estimated seen	Total
	11/10-16	17-23	24-30	12/1-7	8-14	15-21	22-28	29-31			
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada									1,190		
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	10	10	10	10	10				2,590		
Black	100	100	100	50	50				19,600		
Gadwall											
Baldpate											
Pintail									980		
GW teal	50	50	10						4,690		
BW teal									2,800		
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye	80	100	100	100	80				4,270		
Bufflehead	100	50	50	50	50				3,850	3,990	
Ruddy											
Other											
Data furnished are estimates											
Coot:											

(over)

NR-1 Cont. From

Sept

to

Dec

19 71

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans				Principal feeding areas
Geese	1,190	10		
Ducks	38,180 <sup>9,200</sup>	690		Principal nesting areas
Coots				

Reported by W Forward

### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

- (1) Species: In addition to the birds listed on form, other species occurring on the refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).



3-1751  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Rachel Carson N. W. Months of Jan. to Apr. 1970

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<u>I. Water and Marsh Birds:</u>										
<del>Great Blue Heron</del>	1	4/28	2	4/30	1	4/30				90
Green Heron	1	4/28	3	4/30	1	4/30				150
<u>II. Shorebirds, Gulls and Terns:</u>										
Greater Yellowlegs	2	4/28	5	4/30	1	4/30				150
Lesser Yellowlegs	5	4/29	10	4/30	2	4/30				300
Great Black-backed Gull	5	1/1	10	4/1	1	4/30				2,400
Herring Gull	10	1/1	50	4/10	5	4/30				6,000

DATA FURNISHED ARE ESTIMATES.

(over) NR-1A From Jan. to April 1970 5RF-8/69





3-1751  
Form NR-1A  
(Aug. 1952)

**MIGRATORY BIRDS**  
(Other than Waterfowl)

Refuge Point Pelee National Park

Months of May to August 19 70

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Inclu- sive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<b>I. Water and Marsh Birds:</b>										
Great Blue Heron	1	5/1	5	8/20	2	8/31				1,200
Green Heron	2	5/1	10	8/28	1	8/31				3,000
<b>II. Shorebirds, Gulls and Terns:</b>										
Greater Yellowlegs	2	5/25	25	8/31	5	8/31				3,000
Lesser Yellowlegs	10	5/25	75	8/25	10	8/31				4,500
Semipalmated Sandpiper	20	6/1	100	8/31	20	8/31				6,000
Great Black-backed Gull	5	5/1	30	8/31	2	8/31				6,000
Herring Gull	25	5/1	150	8/31	10	8/31				24,000

(over)

NR-1A

From May

to August 1970

5RF-8/69

(1)	(2)		(3)		(4)		(5)		(6)	
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	1	5/1	25	8/31	2					1,800
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow	5	5/1	20	6/1	10	8/31				6,000

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

If more space is needed for listing species in Group I, you can X out heading for Group II and continue listing. Retype heading of Group II below, or list Group II on a second page. Here, too, if the list is long, you can X out both headings and retype heading for Group II at top of form. This can eliminate the necessity for a third page of form.

#### Explanation of column headings:

- (1) Species: Use correct names as found in the A.O.U. Checklist.
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Rachel Carson N. W.

Months of Sept. to Dec. 19 70

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<b>I. Water and Marsh Birds:</b>										
Common Loon	1	9/15	10	10/10	2	12/1				300
Double-crested Cormorant	2	9/10	30	10/20	5	11/1				600
Great Blue Heron	2	9/1	5	9/30	1	10/15				300
Green Heron	1	9/1	10	9/15	2	9/20				400
Black-crowned Night Heron	3	9/1	10	9/20	1	9/30				600
<b>II. Shorebirds, Gulls and Terns:</b>										
Killdeer	1	9/1	5	9/10	2	9/30				150
Black-bellied Plover	10	9/10	50	9/20	5	9/25				1,500
Lesser Yellowlegs	5	9/1	30	9/20	10	10/15				2,250
Dunlin	2	10/10	50	11/15	20	11/30				3,000
Great Black-backed Gull	10	9/15	30	11/30	20	12/15				3,600
Herring Gull	20	9/1	100	12/1	10	12/15				6,000
Common Tern	2	9/1	15	9/15	1	9/20				150

Data Furnished are estimates.

(over)

NR-1A From Sept. to Dec. 1970

5RF-8/69

(1)	(2)		(3)		(4)		(5)		(6)
III. <u>Doves and Pigeons:</u> Mourning dove White-winged dove	5	9/1	15	9/10	5	9/30			600
IV. <u>Predaceous Birds:</u> Golden eagle Duck hawk Horned owl Magpie Raven Crow	20	9/1	30	11/1	5	12/15			4,500

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

If more space is needed for listing species in Group I, you can X out heading for Group II and continue listing. Retype heading of Group II below, or list Group II on a second page. Here, too, if the list is long, you can X out both headings and retype heading for Group II at top of form. This can eliminate the necessity for a third page of form.

#### Explanation of column headings:

- (1) Species: Use correct names as found in the A.O.U. Checklist.
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1750b  
Form NR-1B  
(Rev. Nov. 1957)  
5RF-2/70

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge Rachel Carson N. W.

For 12-month period ending August 31, 19 70

Reported by W. R. Forward

Title Wildlife(Management) Biologist

(1) Area or Unit Designation	(2) Habitat		(3) Use-days	(4) Breeding Population	(5) Production
	Type	Acreage			
	Crops	-	Ducks	69,895	15 pra.
	Upland	55	Geese	7,015	-
	Marsh	1172	Swans	-	-
	Water	142	Coots	-	-
	Total	1369	Total	76,910	15 pra.
-----					
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
-----					
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
-----					
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
-----					
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
-----					
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
-----					
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

(over)

ARE  
DATA FURNISHED/ESTIMATES.

## INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

- (1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.
- (2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.
- (3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.
- (4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.
- (5) Production: Estimated total number of young raised to flight age.

5RF-2/27/70

3-1752  
Form NR-2  
(April 1946)

# UPLAND GAME BIRDS

Refuge Rachel Carson N. F. Months of Jan. to April 19 70

(1) Species  Common Name	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acre per Bird	Number broods observed	Estimated Total	per- centage	Hunting	For Re- stocking	For Research	Esti- mated number using Refuge	
<b>Ruffed Grouse</b>	<b>55 Acres Upland Brush</b>	<b>27.5</b>	-	-	<b>50:50</b>				<b>2</b>	Pertinent information not specifically requested. List introductions here.

Data furnished are estimates.

*Jan to April 1970* NR-2 Upland Game Birds. 5RF-1/69



# INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- |                     |  |
|---------------------|--|
| (1) SPECIES:        | Use Correct common name.   |
| (2) DENSITY:        | Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: Spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks. |
| (3) YOUNG PRODUCED: | Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.  |
| (4) SEX RATIO:      | This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.  |
| (5) REMOVALS:       | Indicate total number in each category removed during the report period.   |
| (6) TOTAL:          | Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.   |
| (7) REMARKS:        | Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.  |

\* Only columns applicable to the period covered should be used.

3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

Refuge Rachel Carson N. W.

Months of May to August 19 70

(1) Species  Common Name	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	per- centage	Hunting	For Re- stocking	For Research	Esti- mated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	55 acres Upland brush	13.9	-	-	50:50	-	-	-	4	

Data furnished are estimates.

*May to August 1970*

NR-2 Upland Game Birds. 5RF-1/69

3-1752  
Form NR-2  
(April 1946)

UPLAND GAME BIRDS

Refuge Rachel Carson N. W.

Months of Sept. to Dec. 19 70

(1) Species  Common Name	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	per- centage	Hunting	For Re- stocking	For Research	Esti- mated number using Refuge	
<b>Ruffed Grouse</b>	<b>55 acres Upland Brush</b>	<b>27.5</b>	-	-	<b>50:50</b>	-	-	-	<b>2</b>	-

Data furnished are estimates.

NR-2 Upland Game Birds. 5RF-1/69

*Sept to Dec. 1970*

# INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use Correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: Spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.

3-1753  
Form NR-3  
(June 1945)

**BIG GAME**

Refuge Rachel Carson N. W. Calendar Year 1970

(1) Species	(2) Density	(3) Young Produced	(4) Removals			(5) Losses			(6) Intro- ductions	(7) Estimated Total Refuge Population		(8) Sex Ratio
			Hunting	Restocking	Research	Predation	Disease	Winter Loss		Number and Source	Period of Peak Use	As of Dec. 31
White-tailed Deer	590 acres - Brush and tidal marsh edges	-	-	-	-	-	-	-	-	8	6	50-50

Remarks: **DATA FURNISHED ARE ESTIMATES.**



# INSTRUCTIONS

Form NR-3 - BIG GAME

- (1) **SPECIES:** Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.
- (2) **DENSITY:** Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) **YOUNG PRODUCED:** Estimated total number of young produced on refuge.
- (4) **REMOVALS:** Indicate total number in each category removed during the year.
- (5) **LOSSES:** On the basis of known records or reliable estimates indicate total losses in each category during the year.
- (6) **INTRODUCTIONS:** Indicate the number and refuge or agency from which stock was secured.
- (7) **TOTAL REFUGE POPULATION:** Give the estimated population of each species on the refuge at period of its greatest abundance and also as of Dec. 31.
- (8) **SEX RATIO:** Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-1754  
Form NR-4  
(June 1945)

SMALL MAMMALS

Refuge Rachel Carson N. W. Year ending April 30, 1970

(1) Species	(2) Density	Removals						(4) Disposition of Furs					(5)	
Common Name	Cover Types and Total Acres of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	Restocking	For Research	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Popula- tion
								Permit Number	Trappers Share	Refuge Share				
Muskrat	1,314 acres Tidal marsh & water	65	-	-	-	-	-	-	-	-	-	-	-	20
Mink	" " "	164	-	-	-	-	-	-	-	-	-	-	-	8
Otter	" " "	657	-	-	-	-	-	-	-	-	-	-	-	2
Raccoon	590 acres Brush & Tidal marsh edges	59	-	-	-	-	-	-	-	-	-	-	-	10
Striped Skunk	" " "	49	-	-	-	-	-	-	-	-	-	-	-	12
Red Fox	" " "	295	-	-	-	-	-	-	-	-	-	-	-	2
Small Rodents	590 acres Brush & Tidal Marsh edges	-	-	-	-	-	-	-	-	-	-	-	-	-

REMARKS: Data furnished are estimates.



## INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- |     |                     |  |
|-----|---------------------|--|
| (1) | SPECIES:            | Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)  |
| (2) | DENSITY:            | <p>Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.</p> |
| (3) | REMOVALS:           | Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.   |
| (4) | DISPOSITION OF FUR: | On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.   |
| (5) | TOTAL POPULATION:   | Estimated total population of each species reported on as of April 30.   |
|     | REMARKS:            | Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.  |

Bureau of Sport Fisheries and Wildlife  
Division of Wildlife Refuges

# MONTHLY RECREATIONAL USE REPORT

Refuge name

**Rachel Carson N. W.**

State

**Maine**

State

Code

(1-2)

Congressional

District Code

(3-4)

Refuge

Code

(5-7)

Report Yr. | Mo.

Period

(8-11)

(Card Columns). . . . . (12-13) (14-18) (19-25)

ACTIVITY	Code	VISITS FOR THE MONTH	
		Total Number	Total Hours
Hunting:			
Big Game	01		
Upland Game	02		
Waterfowl	03		
Other Migratory	04		
Other	05		
Bow	06		
Fishing:			
Salt Water	07	500	2,000
Warm Water	08		
Cold Water	09		
Environmental Education	10	300	600
Wildlife Photography	11	375	750
Wildlife Observation	12	9,800	14,400
Conducted Programs	13		
Field Trials	14		
Wildlife Trails	15	620	470
Wildlife Tours/Routes	16	20,100	20,100
Visitor Contact Stations	17		
Camping (wildlife related)	18		
Picnicking (wildlife related)	19	1,200	600
Wildlife Interpretive Center	20		
Off-Site Programs	21		

(Card Columns). . . . . (12-13) (14-18) (19-25)

ACTIVITY	Code	VISITS FOR THE MONTH	
		Total Number	Total Hours
On-Site Programs	22		
*Miscellaneous Wildlife	23		
Swimming	24		
Boating	25		
Water Skiing	26		
Camping	27		
Group Camping	28		
Picnicking	29		
Horseback Riding	30		
Bicycling	31		
Winter Sports	32		
Fruit, Nut and Vegetable Collecting	33		
*Miscellaneous Non-Wildlife	34		
Peak Load Day	35	600	
Actual Visits	36	28,100	
Fee Area Use	37		
Number of Fee Areas	38	(14-18)	
Fee Collections	39	\$	
Collection Costs	40	\$	

Form 3-123

(Revised July 1969)

\*Use reverse side to indicate types of activities summarized under miscellaneous codes 23 and 34. MAKE NO OTHER ENTRIES ON FACE OF THIS FORM.

View south of the Wells Division of the Rachel Carson National Wildlife Refuge toward the surf of the Atlantic Ocean. The dedication site of the Rachel Carson Refuge is in the focal center of the picture, with Route 9 in the foreground, the Little River on the left, and the Merriland River on the right. A road was constructed from Route 9 to the site, the public was bussed into the area from a parking area .7 miles west on Route 9. Secretary Hickel's limousine and party was driven to the site.







Above: Preparations for the Dedication ceremonies at Rachel Carson necessitated hand trimming of two acres of woody vegetation (photo taken after head high growth had been removed) to remove "ankle stabbers" below the duff. A one-mile nature trail was also prepared leading from the dedication site.

Below: The speakers platform nears completion.





Secretary Hickel presented the main dedicatory address (see attached copy) to the audience of over 300. At the conclusion of his address he placed the bronze plaque. Other speakers included Assistant Secretary Glasgow; Director John Gottschalk; Congressman Kyros; Warren Delano, Maine Nature Conservancy; and George Bucknam, Commissioner of Main Department of Inland Fisheries and Game. Regional Director Griffith was master of ceremonies.







We removed trees to permit viewing of the salt marsh and ocean beyond as you stand in front of the plaque.

Below: At the conclusion of the ceremonies Refuge Manager Moses took Secretary Hickel on a walking tour of the site.





At the rear of the dedication site, opposite the speakers platform, Secretary Hickel was introduced to Ray Callard who was previously a work leader with the Iroquois Job Corps Center and is now in a similar capacity as sign shop instructor at the Iroquois Narcotics Addition Control Center now occupying the Job Corps site. Ray and his family traveled out from Iroquois to attend the ceremony. The redwood routed sign is a fine example of the high quality work that Ray turns out. The Secretary was quite taken up with it for obvious reasons.







Secretary Hickel seemed to thoroughly enjoy mingling and talking with the people.

Below: Flanked by Regional Director Griffith, Refuge Manager Moses, Warren Delano, and Director Gottschalk, the Secretary converses with a group of youths. The lady in black, who we later learned was the Republican chairwoman for that area, advised Secretary Hickel "to keep listening to our nation's youth because in them lies the salvation of our nation's environment".



Bureau of Sport Fisheries and Wildlife  
Division of Wildlife Refuges

MONTHLY RECREATIONAL USE REPORT

Refuge name

Rachel Carson N. W.

State

Maine

State

Code

(1-2)

Congressional

District Code

(3-4)

Refuge

Code

(5-7)

Report Yr.   Mo.

Period

(8-11)

(Card Columns). . . . . (12-13) (14-18) (19-25)

ACTIVITY	Code	VISITS FOR THE MONTH	
		Total Number	Total Hours
Hunting:			
Big Game	01		
Upland Game	02		
Waterfowl	03		
Other Migratory	04		
Other	05		
Bow	06		
Fishing:			
Salt Water	07	500	2,000
Warm Water	08		
Cold Water	09		
Environmental Education	10	300	600
Wildlife Photography	11	375	750
Wildlife Observation	12	9,800	14,400
Conducted Programs	13		
Field Trials	14		
Wildlife Trails	15	620	470
Wildlife Tours/Routes	16	20,100	20,100
Visitor Contact Stations	17		
Camping (wildlife related)	18		
Picnicking (wildlife related)	19	1,200	600
Wildlife Interpretive Center	20		
Off-Site Programs	21		

(Card Columns). . . . . (12-13) (14-18) (19-25)

ACTIVITY	Code	VISITS FOR THE MONTH	
		Total Number	Total Hours
On-Site Programs	22		
*Miscellaneous Wildlife	23		
Swimming	24		
Boating	25		
Water Skiing	26		
Camping	27		
Group Camping	28		
Picnicking	29		
Horseback Riding	30		
Bicycling	31		
Winter Sports	32		
Fruit, Nut and Vegetable Collecting	33		
*Miscellaneous Non-Wildlife	34		
Peak Load Day	35	600	
Actual Visits	36	28,100	
Fee Area Use	37		
Number of Fee Areas	38	(14-18)	
Fee Collections	39	\$	
Collection Costs	40	\$	

Form 3-123

(Revised July 1969)

\*Use reverse side to indicate types of activities summarized under miscellaneous codes 23 and 34. MAKE NO OTHER ENTRIES ON FACE OF THIS FORM.

3-1754  
Form NR-4  
(June 1945)

SMALL MAMMALS

Refuge Rachel Carson N. W.

Year ending April 30, 1970

(1) Species	(2) Density		Removals					(4) Disposition of Furs					(5)	
Common Name	Cover Types and Total Acres of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	Restocking	For Research	Share Trapping			Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	Total Popula- tion
								Permit Number	Trappers Share	Refuge Share				
Muskrat	1,314 acres Tidal marsh & water	65	-	-	-	-	-	-	-	-	-	-	-	20
Mink	" " "	164	-	-	-	-	-	-	-	-	-	-	-	8
Otter	" " "	657	-	-	-	-	-	-	-	-	-	-	-	2
Raccoon	590 acres Brush & Tidal marsh edges	59	-	-	-	-	-	-	-	-	-	-	-	10
Striped Skunk	" " "	49	-	-	-	-	-	-	-	-	-	-	-	12
Red Fox	" " "	295	-	-	-	-	-	-	-	-	-	-	-	2
Small Rodents	590 acres Brush & Tidal Marsh edges	-	-	-	-	-	-	-	-	-	-	-	-	-

REMARKS: Data furnished are estimates.



# INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)
  - (2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
  - (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headings listed.
  - (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprime-ness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
  - (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.



3-1750a  
Cont. NR-1  
(Rev. March 1953)  
5RF - 4/68

W A T E R F O W L  
(Continuation Sheet)

REFUGE Rachel Carson N. W.

MONTHS OF Sept. TO Dec., 1970

(1)	(2)								(3)	(4)	
	Weeks of reporting period								Estimated	Production	
Species	11/10-16:17 - 23 : 24 - 30	12/1-7	: 8 - 14	: 15 - 21	: 22 - 28	: 29 - 31	:	waterfowl	Broods	Estimated	
	11	12	13	14	15	16	17	18	days use	seen : Total	
Swans.											
Whistling											
Trumpeter											
Geese:											
Canada									1,190		
Cackling											
Bramb											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	10	10	10	10	10				2,590		
Black	100	100	100	50	50				19,600		
Gadwall											
Baldpate											
Pintail									980		
GW teal	50	50	10						4,690		
BW teal									2,800		
Cinnamon teal											
Shoveler											
Wood											
Redhead											
Ring-necked											
Canvasback											
Scaup											
Goldeneye	80	100	100	100	80				4,270		
Bufflehead	100	50	50	50	50				<del>3,850</del>	3,990	
Ruddy											
Other											

	(5) Total Days Use	(6) Peak Number	(7) Total Production	SUMMARY
Swans				Principal feeding areas
Geese	1,190	50	-	
Ducks	38,920 38,780	690	-	Principal nesting areas
Coots				

Reported by W. Foward

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

- (1) Species: In addition to the birds listed on form, other species occurring on the refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.
- (2) Weeks of Reporting Period: Estimated average refuge populations.
- (3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.
- (4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (5) Total Days Use: A summary of data recorded under (3).
- (6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.
- (7) Total Production: A summary of data recorded under (4).

WATERFOWL

REFUGE Rachel Carson N. W.

MONTHS OF Sept. TO Dec., 1970

(1) Species	(2) Weeks of reporting period									
	9/1 - 7	8 - 14	15 - 21	22 - 28	29-10/5	6 - 12	13 - 19	20 - 26	27-11/2	3 - 9
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada					20	50	50	30	10	10
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	60	60	50	50	20	20	20	20	10	10
Black	150	150	200	350	500	500	150	200	100	100
Gadwall										
Baldpate										
Pintail	10	20	20	50	20	10	10			
Green-winged teal	30	30	50	50	100	100	50	50	50	50
Blue-winged teal	50	100	150	50	30	10	10			
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye							10	30	50	60
Bufflehead				10	20	30	50	50	50	60
Ruddy										
Other										
	Data furnished are estimates.									
Coot:										

(1)	(2)		(3)		(4)		(5)			(6)
III. <u>Doves and Pigeons:</u>										
Mourning dove	5	9/1	15	9/10	5	9/30				600
White-winged dove										
IV. <u>Predaceous Birds:</u>										
Golden eagle										
Duck hawk										
Horned owl										
Magpie										
Raven										
Crow	20	9/1	30	11/1	5	12/15				4,500

#### INSTRUCTIONS

See Wildlife Refuges Manual Section 3321-24, "Wildlife Records".

If more space is needed for listing species in Group I, you can X out heading for Group II and continue listing. Retype heading of Group II below, or list Group II on a second page. Here, too, if the list is long, you can X out both headings and retype heading for Group II at top of form. This can eliminate the necessity for a third page of form.

Explanation of column headings:

- (1) Species: Use correct names as found in the A.O.U. Checklist.
- (2) First Seen: The first migration record for the species for the reporting period.
- (3) Peak Numbers: Estimated number and inclusive dates when peak population of the species occurred.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated species days use (average population X no. days present) of refuge during the reporting period.

3-1751  
Form NR-1A  
(Aug. 1952)

MIGRATORY BIRDS  
(Other than Waterfowl)

Refuge Rachel Carson N. W.

Months of Sept. to Dec. 19 70

(1)	(2)		(3)		(4)		(5)			(6)
Species	First Seen		Peak Concentration		Last Seen		Production			Total
Common Name	Number	Date	Number	Inclusive Dates	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Use
<u>I. Water and Marsh Birds:</u>										
Common Loon	1	9/15	10	10/10	2	12/1				300
Double-crested Cormorant	2	9/10	30	10/20	5	11/1				600
Great Blue Heron	2	9/1	5	9/30	1	10/15				300
Green Heron	1	9/1	10	9/15	2	9/20				400
Black-crowned Night Heron	3	9/1	10	9/20	1	9/30				600
<u>II. Shorebirds, Gulls and Terns:</u>										
Killdeer	1	9/1	5	9/10	2	9/30				150
Black-bellied Plover	10	9/10	50	9/20	5	9/25				1,500
Lesser Yellowlegs	5	9/1	30	9/20	10	10/15				2,250
Dunlin	2	10/10	50	11/15	20	11/30				3,000
Great Black-backed Gull	10	9/15	30	11/30	20	12/15				3,600
Herring Gull	20	9/1	100	12/1	10	12/15				6,000
Common Tern	2	9/1	15	9/15	1	9/20				459

Data Furnished are estimates.

(over)

NR-1A

From Sept. to Dec. 1970

5RF-8/69



3-1752

Form NR-2

(April 1946)

## UPLAND GAME BIRDS

Refuge Rachel Carson N. W.Months of Sept. to Dec. 19 70

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods observed	Estimated Total	per- centage	Hunting	For Re- stocking	For Research	Esti- mated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ruffed Grouse	55 acres Upland Brush	27.5	-	-	50:50	-	-	-	2	-

Data furnished are estimates.

NR-2 Upland Game Birds. 5RF-1/69



# INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.\*

- (1) SPECIES: Use Correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: Spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

\* Only columns applicable to the period covered should be used.